A Bibliography of the Arctic Charr, *Salvelinus alpinus* (L.) Complex: 1981 through 1984

K.E. Marshall and M. Layton

Western Region
Department of Fisheries and Oceans
Winnipeg, Manitoba R3T 2N6

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A BIBLIOGRAPHY OF THE ARCTIC CHARR, *Salvelinus alpinus* (L.) COMPLEX: 1981 THROUGH 1984

by

K.E. Marshall and M. Layton

Western Region
Department of Fisheries and Oceans
Winnipeg, Manitoba R3T 2N6

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ABSTRACT

MARSHALL, K.E., and M. LAYTON 1985 A bibliography of the Arctic charr, Salvelinus alpinus (L.) complex: 1981 through 1984. Can. Tech. Rep. Fish. Aquat. Sci. 1345: iv + 16 p.

Lists references published between 1981 and 1984. In addition to Arctic charr, Salvelinus alpinus (Linnaeus), of North America and Europe, the bibliography covers the other closely related taxa inhabiting the waters of Russia and Japan, including the Dolly Varden, S. malma (Walbaum) and white-spotted char, S. leucomaenis (Pallas). The bibliography proper is in alphabetical order by author. Taxonomic, geographic and subject indices are provided.

Key words: bibliographies; Dolly Varden; Salmo alpinus.

RESUME

MARSHALL, K.E., and M. LAYTON. 1985 A bibliography of the Arctic charr, Salvelinus alpinus (L.) complex: 1981 through 1984. Can. Tech. Rep. Fish. Aquat. Sci. 1345: iv + 16 p.

Comprend ouvrages publiés depuis 1981 jusqu'à 1984. L'auteur répertorie non seulement les ouvrages relatifs à l'omble chevalier, Salvelinus alpinus (Linnaeus), mais aussi ceux portant sur les espèces apparentées qui vivent dans les eaux de la Russie et du Japon, y compris la Dolly Varden, S. malma (Walbaum) et l'omble, Salvelinus leucomaenis (Pallas). La bibliographie elle-même est en ordre alphabétique selon les auteurs. Elle contient également des index taxinomiques et géographiques et un index des sujets.

Mots-clés: bibliographies; Dolly Varden; Salmo alpinus.

INTRODUCTION

In 1981 a revised bibliography on the Arctic charr was published as Technical Report 1004; it included those references from Technical Report 621 (1977).

This bibliography is an update of Technical Report 1004. Most of the references in this report were published during the period 1981 through 1984. There are some references dated prior to 1981 which were not included in Technical Report 1004.

Since Technical Report 1004 was published, new references have been obtained from a profile search for Salvelinus on the CAN/SDI Service. Computer searches on a variety of data bases have also been made and some additional references have been obtained.

Where possible the original reference has been checked for accuracy but, as all were not available, there may be some errors in citation.

FORMAT

The format adopted is similar to that used in Technical Report 1004. The references in this bibibliography have not been numbered as in the previous reports, therefore the citations in the taxonomic, geographic and subject indexes are to author and year rather than to number.

The bibliography is divided into four sections:

1. Author Index

References are listed in alphabetical order by author. Works by the same author are arranged by year of publication, the oldest being listed first. Papers written in cooperation with others are listed after those by the senior author alone in alphabetical order by second author. There are no cross references from junior authors.

This index is the bibliography proper. As far as possible the title of the paper in the language in which it is written is given following the year of publication. If this title is enclosed in brackets [], this title is not given in the original work. A title enclosed in parentheses is taken from the publication (or its translation) but is in a language, usually English, other than that in which the original paper is written. Russian titles have been transliterated. Japanese titles have been translated, using the title in English from the original journal when this is available. Accents and other diacritical marks have been omitted.

Abbreviations for journals have been made according to the Serial Sources for the BIOSIS Data Base Volume 1983. Those journals not listed in this work have been abbreviated following the same format except in those cases where it has not been possible to identify for certain the full title of the journal in question. In this case, the abbreviation has been given in the form found.

2. Taxonomic Index

This lists, in alphabetical order, the various subgeneric taxa which have been used by authors for fish from the complex. No distinction has been made as to the status ascribed to that taxon by an author.

3. Geographic Index

This index identifies the geographic areas, when this is of significance, covered by the reference. The two main divisions are into the Palaearctic and Neoarctic Regions. Each region is broken down into countries. The larger countries may be subdivided into States, Provinces or other subdivisions. References are only listed under the most specific heading.

4. Subject Index

The subject headings chosen are not taken from any standard thesaurus. The headings in this report are similar to those used in Technical Report 1004.

As many of the references have not been seen in the original, the indexing has been based on the information given by the citing source. It is, therefore, probably that in some cases, information is present in some papers on subjects not indicated in these indexes.

NOTES ON USING THE INDICES

For the benefit of those not familiar with the type of index provided, these notes may be of some help.

To locate references on the reproduction of charr in England, for example, compare the list of references under the heading "England" in the geographic index with those under "reproduction" in the subject index. Those references which occur in both lists are potentially relevant references. To find the full bibliographic details look up the reference in the author index.

CONCLUSION

This bibliography, as with all others, cannot be complete. Further updates will be issued as further references are collected. It would be much appreciated if authors would forward details of any references that have not been included as well as any corrected references to the following address:

K. E. Marshall
Head, Scientific Information Services and Library
Freshwater Institute Library
501 University Crescent
Winnipeg, Manitoba, Canada R3T 2N6

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AUTHOR INDEX

ALTUKHOV, Yu.P. 1982 Biochemical population genetics and speciation. Evolution 36(6): 1168-1181.

AMANN, E. 1980 Limnologische und fischereiliche untersuchungen am Suenser See (Vorarlberg). (Limnological and fishery-biological investigations in the Suenser See (Vorarlberg, Austria).) Oesterr. Fisch. 33(11-12): 205-215.

ANDERSEN, R. 1982 Lake spawning brown trout, Salmo trutta and Arctic char, Salvelinus alpinus with common spawning area in Lake Selura, southwestern Norway. Fauna (Oslo) 35(4): 162-168.

ANDERSSON, L., N. RYMAN, and G. STAHL 1983 Protein loci in the Arctic charr, Salvelinus alpinus L.: electrophoretic expression and genetic variability patterns. J. Fish Biol. 23(1): 75-94.

BAGIRYAN, S.Sh. 1981 O primenenii metodov chislennoj taksonomii dlya razdeleniya dvukh simpatricheskikh gruppirovok gol'tsa ozera Azabach'e. (On the application of numerical taxonomy methods for identification of two sympatric groups of chars from Lake Azabach'e.) Biol. Nauki (Mosc.) 1: 107-110.

BAKKE, T.A. 1982 A re-description of Phyllodistomum umblae Digenea Gorgoderidae. Mol. Biochem. Parasitol. 1982 suppl.: 324-325.

BALON, E.K. 1982 Mark Morton and his 'Dolly Varden - victim of piscatorial prejudice'. Environ. Biol. Fishes 7(1): 3-5.

BARBER, F.G. 1978 Speculation concerning fish populations in the water of the Hudson Bay system. Can. Fish. Mar. Serv. Tech. Rep. 829: iii + 6 p.

BATTERMAN, A.R., and P.M. COOK 1981 Determination of mineral fiber concentrations in fish tissues. Can. J. Fish. Aquat. Sci. 38(8): 952-959.

BELGHAUG, R., and K.R. DOVING 1977 Odour threshold determined by studies of the induced waves in the olfactory bulb of the char (Salmo alpinus L.). Comp. Biochem. Physiol. A. Comp. Physiol. 57(3): 327-330.

BLACK, G.A. 1982 Zoogeography of Cystidicola cristovomeri in char Salvelinus spp. Mol. Biochem. Parasitol. 1982 suppl.: 351-352.

BLACK, G.A. 1983 Origin, distribution, and postglacial dispersal of a swimbladder nematode, Cystidicola stigmatura. Can. J. Fish. Aquat. Sci. 40(8): 1244-1253.

BLACK, G.A., and M.W. LANKESTER 1981 The transmission, life span, and population biology of Cystidicola cristivomeri White, 1941 (Nematoda: Habronematoidea) in char, Salvelinus spp. Can. J. Zool. 59(3): 498-509.

BORISOVETS, E.F. 1982 Diskriminantnyk analiz prokhodnykh gol'tsov roda Salvelinus (Salmonidae) Chukotski. (Discriminate analysis of diadromous chars of the genus Salvelinus (Salmonidae) from the Chukotski Peninsula.) Vopr. Ikhtiol. 22(3): 365-373. (J. Ichthyol. 22(3): 11-19)

BRANNON, E.L., R.P. WHITMAN, and T.P. QUINN 1984 Responses of returning adult coho salmon to home water and population-specific odors. Trans. Am. Fish. Soc. 113(3): 374-377.

BUTORINA, T.E. 1980 Ekologicheskij analiz parazitofauny gol'tsov (Salvelinus) reki Kamchatki. (Ecological analysis of the parasite fauna of chars (Salvelinus) from the Kamchatka River.) In S.M. Konovalov (ed.) Populyatsionnaya biologiya I sistematika lososevykh. (Population biology and taxonomy of Salmonidae). Vladivostok (USSR) dvnts an S.S.S.R. 18.

BUTORINA, T.E. 1983 Chislennost' i migratsii gol'sov ozera azabach'ego (Kamchatka). (Abundance and migrations of chars from Azabach'e Lake (Kamchatka).) Biol. Morya 1: 29-36. (Sov. J. Mar. Biol. 9(1): 26-32)

BUTORINA, T.E., O.N. PUGACHEV, and P.P. KHOKHLOV 1980 (Nekotorye voprosy ekhologii zoogeografii gol'tsov roda Salvelinus tikhookeanskogo bassejna. (On the ecology and zoogeography of the genus Salvelinus in the Pacific Ocean Basin.) In S.M. Konovalov (ed.) Populyatsionnaya biologiya i sistematika lososevykh. (Population biology and taxonomy of Salmonidae.) Vladivostok (USSR) dvnts an S.S.S.R. 18: 82 p.

BUTSUK, S.V., and B.I. BESSONOV 1981 Direct current electric field in some teleost species: effect of medium salinity. J. Comp. Physiol. A. Sens. Neural Behav. Physiol. 141(2): 277-282.

CANADA DEPARTMENT OF FISHERIES AND OCEANS 1984a Arctic charr. Underwater World. Minister of Supply and Services, Ottawa. 6 p. (Also available in French)

CANADA DEPARTMENT OF FISHERIES AND OCEANS 1984b Arctic char (Salvelinus alpinus), p. 3-4. In Selected freshwater fish. Underwater World. Minister of Supply and Services, Ottawa. (Also available in French)

CANADA DEPARTMENT OF FISHERIES AND OCEANS 1984c Fisheries operations. The salmonid fisheries of Labrador in 1983. Canada, Department of Fisheries and Oceans, St. John's, NF. 11 p.

CARDER, G.W. 1981 Data from the commercial fishery for Arctic charr, Salvelinus alpi-

nus (Linnaeus), in the Cambridge Bay area, Northwest Territories, 1979-80. Can. Data Rep. Fish. Aquat. Sci. 284: v + 22 p.

CARDER, G.W. 1983 Data from the commercial fishery for Arctic charr, Salvelinus alpinus (Linnaeus), in the Cambridge Bay and Rankin Inlet areas, Northwest Territories, 1981-82. Can. Data Rep. Fish. Aquat. Sci. 391: v + 24 p.

CARDER, G.W., and R.F. PEET 1983 Data from the commercial fishery for Arctic char, Salvelinus alpinus (Linnaeus), in the District of Keewatin, Northwest Territories, 1973-81. Can. Data Rep. Fish. Aquat. Sci. 357: viii + 65 p.

CASTONGUAY, M., and G.J. FITZGERALD 1982 Critiques de la methode de distinction entre poissons anadromes et dulcicoles de la meme espece par la teneur en strontium de leur ecailles. (Examination of the method of discriminating between anadromous and freshwater fish of the same species by the content of strontium of the scales.) Can. J. Fish. Aquat. Sci. 39(10): 1423-1425.

CHERESHNEV, I.A. 1982 K voprosy o taksonomicheskom statuse simpatricheskikh prokhodnykh gol'tsov roda Salvelinus (Salmonidae) vostochnoi Chukotki. (The taxonomic status of sympatric diadromous chars of the genus Salvelinus (Salmonidae) from eastern Chukotka.) Vopr. Ikhtiol. 22(6): 922-936. (J. Ichthyol. 22(6): 22-38)

CONNEELY, J.J., and T.K. McCARTHY 1984 The metazoan parasites of freshwater fishes in the Corrib Catchment Area, Ireland. J. Fish Biol. 24(4): 363-375.

CORKUM, L.D., and P.J. McCART 1981 A review of the fisheries of the Mackenzie Delta and nearshore Beaufort Sea. Can. Manuscr. Rep. Fish. Aquat. Sci. 1613: v + 55 p.

COWX, I.G. 1982 Concentrations of heavy metals in the tissues of trout, Salmo trutta, and char, Salvelinus alpinus, from two lakes in North Wales. Environ. Pollut. Ser. A Ecol. Biol. 29(2): 101-110.

CRAIG, J.F., and J.M. FLETCHER 1982 The variability in the catches of charr, Salvelinus alpinus L., and perch, Perca fluviatilis L., from multi-mesh gill nets. J. Fish Biol. 20(5): 517-526.

CRAIG, P.C. 1984 Fish use of coastal waters of the Alaskan Beaufort Sea: a review. Trans. Am. Fish. Soc. 113(3): 265-282.

CRAIG, P.C., and L. HALDORSON 1981 Beaufort Sea barrier island-lagoon ecological process studies: final report, Simpson Lagoon. Part 4-fish, p. 384-655. In Environmental assessment of the Alaskan continental shelf. Final reports of principal investigators. Vol. 7, biological studies. NOAA/OMPA, Boulder, CO.

DANNEVIG, B.H., and T. BERG 1978a Temperature adaptation of lysosomal enzymes in fishes. Comp. Biochem. Physiol. B. Comp. Biochem. 61(1): 115-118.

DANNEVIG, B.H., and T. BERG 1978b Uptake and proteolysis of denatured human serum albumin by kidneys in chars (Salmo alpinus L.). Comp. Biochem. Physiol. A. Comp. Physiol. 59(3): 299-303.

DANNEVIG, B.H., and K.R. NORUM 1979 Esterification of cholesterol in fish plasma: studies on the cholesterol esterifying enzyme in plasma of char (Salmo alpinus L.). Comp. Biochem. Physiol. B. Comp. Biochem. 63(4): 537-541.

DANNEVIG, B.H., and K.R. NORUM 1982 Cholesterol esterification and lipids in blood plasma of the char (Salmo alpinus L.) during sexual maturation. Comp. Biochem. Physiol. B. Comp. Biochem. 73(4): 771-777.

DANNEVIG, B.H., and K.R. NORUM 1983 Effects of fasting on plasma lipids and cholesterol esterification in plasma, liver and intestinal mucosa in the char (Salmo alpinus L.). Comp. Biochem. Physiol. B. Comp. Biochem. 74(2): 243-250.

DANNEVIG, B.G., H. TOLLESHAUG, and T. BERG 1981 Evidence for in vivo hepatic uptake of a galactose terminated glycoprotein in fish Salmo alpinus. Biochim. Biophys. Acta 677(3-4): 501-505.

DEMPSON, J.B., and R.K. MISRA 1984 Identification of anadromous Arctic charr Salvelinus alpinus stocks in coastal areas of northern Labrador based on a multivariate statistical analysis of meristic data. Can. J. Zool. 62(4): 631-636.

DICK, T.A., and M. BELOSEVIC 1981 Parasites of arctic charr, Salvelinus alpinus (Linnaeus), and their use in separating sea-run and non-migrating charr. J. Fish Biol. 18: 339-347.

DOVING, K.B., and R. BELGHAUG 1977 Frequency of induced waves in the olfactory bulb in char (Salmo alpinus L.); a temperature dependence. Comp. Biochem. Physiol. A. Comp. Physiol. 56(4): 577-579.

DOVING, K.B., P.S. ENGER, and H. NORDENG 1973a Electrophysioloqical studies on the olfactory sense in char (Salmo alpinus L.). Comp. Biochem. Physiol. A. Comp. Physiol. 45(1): 21-24.

DOVING, K.B., H. NORDENG, and B. OAKLEY 1974 Single unit discrimination of fish odors released by char (Salmo alpinus L.) populations. Comp. Biochem. Physiol. A. Comp. Physiol. 47(3): 1051-1063.

DOVING, K.B., H. NORDENG, B. OAKLEY, and H. RUSSWURM 1973b Skin mucus basis for odor discrimination in migrating char, Salmo alpinus. Acta Physiol. Scand. Suppl. 396: 50.

DOVING, K.B., and R. SELSET 1976 Chemical characterization of potent odorants from the skin mucus of the char, Salmo alpinus. Acta Physiol. Scand. Suppl. 440: 79.

DOVING, K.B., R. SELSET, and G. THOMMESEN 1980 Olfactory sensitivity to bile acids in salmonid fishes. Acta Physiol. Scand. 108(2): 123-132.

DUMONT, P. 1982 Dispersion post-glaciaire de l'omble chevalier d'eau douce (Salvelinus alpinus) dans le Quebec Meridional. (Postglacial dispersion of the freshwater Arctic char (Salvelinus alpinus) in southern Quebec. Nat. Can. (Que.) 109(2): 229-234. (Can. Transl. Fish. Aquat. Sci. 4961, 1983)

DUNBAR, M.J. 1970 On the fishery potential of the sea waters of the Canadian north. Arctic 23(3): 150-174.

DUTIL, J.D. 1983 Periodic changes in the condition of the Arctic charr (Salvelinus alpinus of the Nauyuk Lake system. Ph.D. thesis, University of Manitoba, Winnipeg, MB. vi + 149 p. (Diss. Abstr. Int. 44B(1): 74)

ELLIOTT, C.L., and S. PECK 1980 Dipper, Cinclus mexicanus, swallowed by trout, Salvelinus malma. Wilson Bull. 94(4): 524.

ELLIS, V., and B. BOWLER 1981 Lake and reservoir investigations - Pend Oreille Lake fisheries investigations. Pend Oreille Lake creel census. Idaho Dep. Fish Game Job Perform. Rep. 60 p.

EVEREST, F.H., and W.R. MEEHAN 1981 Forest management and anadromous fish habitat productivity. Trans. N. Am. Wildl. Nat. Resour. Conf. 46: 521-530.

FERGUSON, A. 1981 Systematics of Irish charr Salvelinus alpinus as indicated by electrophoretic analysis of tissue proteins. Biochem. Syst. Ecol. 9(2-3): 225-232.

FILIPSSON, O. 1983 Vaetterns fiskebestaand belysta genom provfisken med bottenaet. (The fish stocks of Lake Vaettern as seen from bottom-set gillnets.) Inf. Soetvattenslab. Drottningholm 1: 61 p.

FRALEY, J., D. READ, and P. GRAHAM 1981 Flathead River fishery study. Montana Department of Fish, Wildlife and Parks, Helena, MT. 212 p.

FRYER, G. 1981 The copepod Salmincola edwardsii as a parasite of Salvelinus alpinus in Britain, and a consideration of the so-called relict fauna of Ennerdale Water. J. Zool. (Lond.) 193(2): 253-268.

FURUKAWA, T. 1981 Feeding habit of stream resident iwana, Salvelinus leucomaenis (Pallas), with relation to spatial and temporal distribution of food organisms. Int. Ver. theor. angew. Limnol. Verh. 21(3): 1297.

GILLMAN, D.V., and A.H. KRISTOFFERSON 1984 Biological data on Arctic charr, Salvelinus alpinus (L.) from the Coppermine River, Northwest Territories, 1981-82. Can. Data Rep. Fish. Aquat. Sci. 440: iv + 16 p.

GLOVA, G.J., and P.J. McCART 1978 Studies of Arctic char populations in Nachvak Fiord, Labrador. Arctic Petroleum Operators Association (APOA) 146-7: 116 p.

GLUBOKOVSKII, M.K. 1980 Nekotorye voprosy populyatsionnoj struktury u gol'tsov Salvelinus, Salmoniformes. (Some problems of the population structure of chars (Salvelinus, Salmoniformes), p. 58-64. In S.M. Konovalov (ed.) Populyatsionnaya biologiya i sistematika lososevykh. (Population biology and taxonomy of Salmonidae.) Vladivostok (USSR) dvnts an S.S.S.R. 18.

GLUBOKOVSKII, M.K., and I.A. CHERESHNEV 1981 Spornye voprosy filigenii gol'tsov roda Salvelinus golarktiki. I. Izuchenie prokhodnykh gol'tsov iz basseina vostochnosibirskogo morya. (Unresolved problems concerning the phylogeny of chars (Salvelinus) of the holarctic: 1. Migratory chars of the east-Siberian Sea basin.) Vopr. Ikhtiol. 21(5): 771-786. (J. Ichthyol. 21(5): 1-15)

GNAIGER, E., R. LACKNER, M. ORTNER, V. PUTZER, and R. KAUFMANN 1981 Physiological and biochemical parameters in anoxic and aerobic energy metabolism of embryonic salmonids Salvelinus alpinus. Pfluegers Arch. Eur. J. Physiol. 391(Suppl. 1): R57.

GRUBER, K., and W. WIESER 1983 Energetics of development of the alpine charr, Salvelinus alpinus in relation to temperature and oxygen. J. Comp. Physiol. B. Biochem. Syst. Environ. Physiol. 149(4): 485-493.

GUSTAFSON, K.J. N.-A. NILSSON, and E. OLOFSSON 1981 Oevre saervsjoen, konsekvenser av rotenonbehandling av en stor norrlaendsk sjoe. (Consequences of the rotenone treatment of a large northern swedish lake.) Inf. Soetvattenslab. Drottningholm. 20 p.

HALVORSEN, O. 1970 Morphological studies of Diphyllobothrium plerocercoids. Nytt Mag. Zool. (Oslo) 18(1): 98.

HALVORSEN, O., and K. ANDERSEN 1984 The ecological interaction between arctic charr, Salvelinus alpinus (L.), and the plerocercoid stage of Diphyllobothrium ditremum. J. Fish Biol. 25(3): 305-316.

HAMMAR, J. 1983 Effects of introduced Mysis relicta on populations of Arctic char, Salvelinus alpinus, complex in Sweden. Pac. Sci. Congr. Proc. 15(1-2): 93.

HAMMAR, J., O. LINDH, U. BOSTROEM, M. FUERST, and P.E. LINGDELL 1983 Relationerna roeding, maas-och dykandsbinnikemask (Diphyllobothrium spp.) samt foeraend-

ringar i angreppsgrad efter introduktioner av nya fisknaeringsdjur. (The Arctic char and Diphyllobothrium spp. control of infection by means of the introduction of Mysis relicta as a new and alternative fish food organism.) Inf. Soetvattenslab. Drottningholm 4: 72 p.

HANZEL, D.A. 1980 Flathead Lake fisheries investigation. Seasonal, area and depth distribution of cutthroat trout and dolly varden in Flathead Lake. Mont. Dep. Fish. Wildl. Parks Job Prog. Rep. MDFWP-PROJ-F-33-R-13(IA). 3p.

HEGGBERGET, T.G., and B.O. JOHNSEN 1982 Infestations by Gyrodactylus sp. of Atlantic salmon, Salmo salar L., in Norwegian rivers. J. Fish Biol. 21(1): 15-26.

HENDERSON, M.A. 1983 An analysis of prey detection in cutthroat trout (Salmo clarki clarki) and Dolly Varden charr (Salvelinus malma). Ph.D. thesis, University of British Columbia, Vancouver, B.C. (Diss. Abstr. Int. 43B(12): 3878)

HINDAR, K., and B. JONSSON 1982 Habitat and food segregation of dwarf and normal Arctic charr (Salvelinus alpinus) from Vangsvatnet Lake, western Norway. Can. J. Fish Aquat. Sci. 39(7): 1030-1045.

HONSING-ERLENBURG, W. 1982 Die identifikation von Salmoniden mittles biochemischer Merkmale (am Beispiel der LDH bei Saiblingen. (Taxonomic identification of salmonids with biochemical parameters.) Oesterr. Fisch. 35(1): 14-17.

HUNTER, J.G. 1968 Fishes and fisheries, p. 360-378. In C.S. Beals (ed.) Science, history and Hudson Bay. V. 1. Department of Supply and Services, Ottawa.

HUNTER, J.G., S.T. LEACH, D.E. McALLISTER, and M.B. STEIGERWALD 1984 A distributional atlas of records of the marine fishes of Arctic Canada in the National Museums of Canada and Arctic Biological Station. Syllogeus 52: 35 p.

IVANKOV, V.N., and N.I. SERGIENKO 1984 Vnutrennee stroenie yaitsekletok lososevykh i sigovykh i taksonomicheskii status etikh grupp ryb. (The internal structure of eggs in the Salmonidae and Coregonidae and taxonomic status of these groups of fish.) Zool. Zh. 63(2): 222-227.

IVANKOV, V.N., and T.V. SHKAFINA 1981 Morphology and cytochemistry of oogenesis in Salmonidae and Osmeridae. Sov. J. Mar. Biol. 7(1): 38-45.

JAGOE, C.H., and T.A. HAINES 1982 Changes in surface morphology of sunapee charr (Salvelinus alpinus) gills exposed to acute acid stress, p.354. In R.E. Johnson (ed.) Acid rain/fisheries. Proceedings of an international symposium on acidic rain and fishery impacts on northeastern North America. American Fisheries Society, Bethesda, MD.

JAGOE, C.H., and T.A. HAINES 1983 Alterations in gill epithelial morphology of yearling sunapee trout, Salvelinus alpinus oquassa, exposed to acute acid stress. Trans. Am. Fish. Soc. 112(5): 689-695.

JAGOE, C.H., T.A. HAINES, and F.W. KIRCHEIS 1984 Effects of reduced pH on three life stages of Sunapee char Salvelinus alpinus. Bull. Environ. Contam. Toxicol. 33(4): 430-438.

JENSEN, J.W. 1981 Anadromous Arctic char, Salvelinus alpinus, penetrating southward on the Norwegian coast. Can. J. Fish. Aquat. Sci. 38(2): 247-249.

JENSEN, J.W. 1982 A check on the invertebrates of a Norwegian hydroelectric reservoir and their bearing upon fish production. Inst. Freshw. Res. Drottningholm Rep. 60: 39-50.

JOBLING, M. 1983a Effect of feeding frequency on food intake and growth of Arctic charr, Salvelinus alpinus L. J. Fish Biol. 23(2): 177-185.

JOBLING, M. 1983b Influence of body weight and temperature on growth rates of Arctic charr, Salvelinus alpinus L. J. Fish Biol. 22(4): 471-475.

JOBLING, M., and A. WANDSVIK 1983a Effect of social interactions on growth rates and conversion efficiency of Arctic charr, Salvelinus alpinus L. J. Fish Biol. 22(5): 577-584.

JOBLING, M., and A. WANDSVIK 1983b Quantitative protein requirements of Arctic charr, Salvelinus alpinus L. J. Fish Biol. 22(6): 705-712.

JOBLING, M., and A. WANDSVIK 1983c An investigation of factors controlling food intake in Arctic charr, Salvelinus alpinus L. J. Fish Biol. 23(4): 397-404.

JOHNSON, L. 1983 Homeostatic characteristics of single species fish stocks in Arctic lakes. Can. J. Fish. Aquat. Sci. 40(7): 987-1024.

JONASSON, P.M., H. ADALSTEINSSON, C. HUNDING, C. LINDEGAARD, and J. OLAFSSON 1977 Limnology of Iceland. Folia Limnol. Scand. 17: 111-123.

JONES, K.A., and T.J. HARA 1982 Behavioral response by Arctic charr (Salvelinus alpinus) to taurocholic-acid and L-serine, two putative semiochemicals [Abstract #427]. Am. Zool. 22(4): 925.

JONSSON, B., and K. HINDAR 1982 Reproductive strategy of dwarf and normal Arctic charr (Salvelinus alpinus) from Vangsvatnet Lake, western Norway. Can. J. Fish. Aquat. Sci. 39(10): 1404-1413.

JONSSON, B., K. HINDAR, and T.G. NORTHCOTE 1984 Optimal age at sexual maturity of sympa-

tric and experimentally allopatric cutthroat trout and Dolly Varden charr. Oecologia 61(3): 319-325.

JUNGWIRTH, M., and H. WINKLER 1983 The temperature dependence of embryonic development of grayling (Thymallus thymallus), Danube salmon (Hucho hucho), Arctic char (Salvelinus alpinus) and brown trout (Salmo trutta fario). Aquaculture 38(4): 315-327.

KAGAWA, H., K. TAKANO, and Y. NAGAHAMA 1981 Correlation of plasma estradiol 17-beta and progesterone levels with ultrastructure and histochemistry of ovarian follicles in the white-spotted char Salvelinus leucomaenis. Cell Tissue Res. 218(2): 315-330.

KARTAVTSEV, Yu.F., M.K. GLUBOKOVSKII, and I. A. CHERESHNEV 1983 (Genetic differentiation and the level of variability of two sympatric char species Salvelinus (Salmonidae from Chukot national okrug USSR.) Genetika 19(4): 584-593. [In Russian]

KAUKORANTA, M., B.M. MEDNIKOV, V.A. MAKSIMOV, and K. SAVVAITOVA 1982 Geneticheskaya divergentsiya gol'tsov roda Salvelinus (Salmonidae, Salmoniformes) (po dannym molekulyarnoi gibridizatsii DNK x DNK). A. [Genetic divergence of chars of the genus Salvelinus (Salmonidae, Salmoniformes) (from data of molecular DNA x DNA hybridization.)] Zool. Zh. 61(9): 1372-1379. [In Russian; English abstract]

KHOREVIN, L.D., V.A. RUDNEV, and A.P. SHERSHNEV 1981 Vyedanie khishchnymi rybami molodi gorbushi Oncorhynchus gorbuscha (Walbaum) v period skata iz nebol'shoi nerestovoi reki o. Sakhalin. (Predation on juvenile pink salmon by predatory fishes during the period of their seaward migration on Sakhalin Island.) Vopr. Ikhtiol. 21(6): 1016-1022. (J. Ichthyol. 21(6): 47-53)

KIOT, K., and M. OGURI 1984 Histological observations on the heart ventricles in 18 species of teleosts. Bull. Jpn. Soc. Sci. Fish. 50(2): 257-262.

KIPLING, C. 1984 Some observations on autumn-spawning charr, Salvelinus alpinus L., in Windermere, 1939-82. J. Fish Biol. 24(2): 229-234.

KIPLING, C., and LE CREN, E.D. 1984 Mark-recapture experiments on fish in Windermere, 1943-82. J. Fish Biol. 24(4): 395-414.

KOMIYAMA, E., N. OHTAISHI, and K. MAEKAWA 1982 Occurrence of a sea-run type of the Dolly Varden in the Shiretoko Peninsula, Hokkaido. Jpn. J. Ichthyol. 29(3): 298-302.

KORNFIELD, I., K.F. BELAND, J.R. MORING, and F.W. KIRCHEIS 1981 Genetic similarity among endemic Arctic char (Salvelinus alpinus) and implications for their management. Can. J. Fish. Aquat. Sci. 38(1): 32-39.

KOSYUK, G.N., and S.N. BORKHSENIUS 1981 Intrapopulation differences in the structures of the genomes in two species of salmon-like fishes. Mol. Biol. (Mosc.) 15(3): 547-553. (Mol. Biol. (Engl. Transl. Mol. Biol. (Mosc.)) 15(3 part 1): 422-427)

KOTHBAUER, H., and H. SCHENKEL-BRUNNER 1981 Immunochemical investigations on fish eggs and toad, Bufo bufo, spawn appearance of glycosidases during the hatching process. Zool. Anz. 206(5-6): 354-360. [In German]

KRISTJANSSON, J. 1978 Growth rates of brown trout and Arctic char in Iceland. J. Agric. Res. Icel. 10(2): 125-134.

KRISTOFFERSON, A.H., and G.W. CARDER 1980 Data from the commercial fishery for Arctic char, Salvelinus alpinus (Linnaeus), in the Cambridge Bay area, Northwest Territories. Can. Data Rep. Fish. Aquat. Sci. 184: v + 25 p.

KRISTOFFERSON, A.H., D.R. LEROUX, and J.R. ORR 1982 A biological assessment of Arctic char, Salvelinus alpinus (L.), stocks in the Gjoa Haven-Pelly Bay area of the Northwest Territories, 1979-80. Can. Manuscr. Rep. Fish. Aquat. Sci. 1591: vi + 51 p.

KRISTOFFERSON, A.H., and D.K. McGOWAN 1981 Data on Arctic charr, Salvelinus alpinus (Linnaeus), collected from test fisheries in the Baffin Region, Northwest Territories, 1975-79. Can. Data Rep. Aquat. Sci. 255: vi + 43 p.

KRISTOFFERSON, A.H., and R.D. SOPUCK 1983 The effects of exploitation on the Arctic charr population of the Sylvia Grinnell River, Northwest Territories. Can. Manuscr. Rep. Fish. Aquat. Sci. 1721: v + 35 p.

LANGELAND, A. 1978 Effect of fish (Salvelinus alpinus, Arctic char) predation on the zooplankton in ten Norwegian lakes. Int. Ver. theor. angew. Limnol. Verh. 20(3): 2065-2069.

LANGELAND, A. 1981 Decreased zooplankton density in two Norwegian lakes caused by predation of recently introduced Mysis relicta. Int. Ver. theor. angew. Limnol. Verh. 21(2): 926-937.

LAURENT, P.J. 1982 Resultats de deversements dans le Leman d'ombles marques. (Results obtained after release of tagged chars in Lake Geneva.) Bull. Fr. Piscic. 285: 210-220.

LEARY, R.F., F.W. ALLENDORF, and K.L. KNUDSEN 1983 Consistently high meristic counts in natural hybrids between brook trout, Salvelinus fontinalis and bull trout, Salvelinus confluentus. Syst. Zool. 32(4): 369-376.

LEATHE, S.A., and P.J. GRAHAM 1981 Flathead Lake fish food habits study. Montana

Department of Fish, Wildlife and Parks, Helena, MT. 105 p.

LEDREW, L.J., and J.B. DEMPSON 1982 Summary of catch statistics from the northern Labrador commercial Arctic charr (Salvelinus alpinus) fishery. Can. Data Rep. Fish. Aquat. Sci. 353: iv + 52 p.

LEGENDRE, V. 1980 Les salmonidae au Quebec: un sommaire de la famille. Ministere du Loisir, de la Chasse et de la Peche, Quebec. 4 p.

LOENNING, S. 1981 Comparative electron microscope studies of the chorion of the fish egg. Rapp. P.-V. Reun. Cons. Int. Explor. Mer. 178: 560-564.

McALLISTER, D.E., and D. ST-ONGE 1981 Postglacial fossil fishes from Coppermine River, Northwest Territories, Canada. Can. Field-Nat. 95(2): 203-205.

MAEKAWA, K. 1978 Growth and development of Salvelinus malma miyabei compared with other forms of S. malma. Jpn. J. Ichthyol. 25(1): 9-18.

MAEKAWA, K. 1983 Streaking behaviour of mature male parrs of the Miyabe charr, Salvelinus malma miyabei, during spawning. Jpn. J. Ichthyol. 30(3): 227-234.

MAKSIMOVICH, A.A. 1981 Activity of some enzymes of carbohydrate metabolism in humpback salmon Oncorhynchus gorbuscha tissues during spawning starvation. Biol. Morya (Vladivost.) 6: 48-55. [In Russian]

MALMBERG, G. 1973 Gyrodactylus infestations on species of Salmo in Danish and Swedish hatcheries. Norw. J. Zool. 21(4): 325-326.

MARGOLIS, L., T.E. McDONALD, and G.E. HOSKINS 1981 Absence of the protozoan, Myxosoma cerebralis (Myxozoa: Myxosporea), the cause of whirling disease, in a survey of salmonids from British Columbia. Can. J. Fish. Aquat. Sci. 38(8): 996-998.

MARRER, H. 1980 Die Fischereilichen verhaeltnisse in den Obergengadienerseen, [Fishable stocks in the lakes of Oberengadin (Switzerland).] p. 1-21. In Fischereiliche Bewirtschaftung von Gewaessern im Gebirge (Stock management in mountain waters.) Veroeff. Bundesamt. Umweltschutz. Eidgenoess. FischereiInspekt. 39.

MARSHALL, K.E. 1981 A bibliography of the Arctic charr, Salvelinus alpinus (L.) complex to 1980. Can. Tech. Rep. Fish Aquat. Sci. 1004: iv + 68 p.

MARUYAMA, T. 1981 Comparative ecology on the fluvial forms of Salmo (Oncorhynchus) masou masou (Brevoort) and Salvelinus leucomaenis (Pallas) (Pisces, Salmonidae). I. Structure of spawning redds and spawning sites in Kamidani, River Yura. Jpn. J. Ecol. 31(3): 269-284. [In Japanese; English summary]

MATSUNO, T., T. MAOKA, and S. SAKAGUCHI 1980 Occurrence of beta caroten-2-ol from fishes. Bull. Jpn. Soc. Sci. Fish. 46(12): 1527-1531. [In Japanese; English abstract]

MEDNIKOV, B.M., V.A. MAKSIMOV, and K.A. SAVVAITOVA 1980 Genetic divergence of eurasian chars, 357-364. In E.K. Balon (ed.) Charrs: salmonid fishes of the genus Salvelinus. W. Junk, The Hague.

MITROFANOV, Yu.A. 1983 Peculiarities of intraspecific chromosome variability in teleosts. Zh. Obshch. Biol. 44(5): 679-693. [In Russian]

MIYAUCHI, M., and M. TAKAGI 1981 Conversion of chlorinated nitrobiphenyl ethers and their derivatives to mutagens by white-spotted char, Salvelinus leucomaenis, liver homogenate. Bull. Jpn. Soc. Fish. 47(2): 243-250.

MOLES, A. 1982 Parasite-host records of Alaskan fishes. U.S. Natl Mar. Fish. Serv. Spec. Sci. Rep. Fish. 760: iii + 41 p.

MONOD, G. 1983 Etude de la contamination chimique du lac Leman par les residus organochlores: polychlorobiphenyles et DDT. Essai d'evaluation des risques pour la reproduction de l'omble chevalier (Salvelinus alpinus). (Study of chemical contamination of Leman Lake by organochlorinated residues: PCB and DDT. Risk estimation for the reproduction of Arctic charr (Salvelinus alpinus).) Ecole Nationale Veterinaire, Lyon, France. 165 p.

MONOD, G., and G. KECK 1982 PCBs in Lake Geneva (Lake Leman) fish. Bull. Environ. Contam. Toxicol. 29(5): 570-576.

MORAVEC, F., L. MARGOLIS, and N.P. BOYCE 1981 Some nematodes of the genus Rhabdochona (Spirurida) from fishes of Japan. Vestn. Cesk. Spol. Zool. 45(4): 277-290.

MORTON, W.M. 1982 Comparative catches and food habits of Dolly Varden and Arctic charrs, Salvelinus malma and S. alpinus, at Karluk, Alaska, in 1939-41. Environ. Biol. Fishes 7(1): 7-28.

MOSHENKO, R.W. 1981 A preliminary assessment of the Arctic charr sport fishery on the Robertson River (Koluktoo Bay), Northwest Territories, 1979. Can. Data Rep. Fish. Aquat. Sci. 306: iv + 9 p.

NAGAHAMA, Y., H. KAGAWA, and G. YOUNG 1982 Cellular sources of sex steroids in teleost gonads. Can. J. Fish. Aquat. Sci. 39(1): 56-64.

NAGASAWA, K., and S. EGUSA 1981 Echinorhynchus cotti (Acanthocephala: Echinorhynchidae) in fish of the Kanita River, Japan

with a note on the life cycle. Jpn. J. Parasitol. 30(1): 45-50.

NAKAMURA, M. 1982 Gonadal sex differentiation in whitespotted char, Salvelinus leucomaenis. Jpn. J. Ichthyol. 28(4): 431-436.

NESTEROV, V.D., and K.A. SAVVAITOVA 1981 Taxonomic position of migratory chars the genus Salvelinus (Salmonidae Salmoniformes) from Chesha Bay of the Barents Sea, USSR. Vestn. Mosk. Univ. Ser. 16 Biol. 1: 20-24. (Mosc. Univ. Biol. Sci. Bull. 36(1): 21-25)

NOMURA, S., and H. SAITO 1982 Production of the extracellular hemolytic toxin by an isolated strain of Aeromonas salmonicida. Bull. Jpn. Soc. Fish. 48(11): 1589-1597.

NORDENG, H. 1983 Solution to the char problem based on Arctic char (Salvelinus alpinus) in Norway. Can. J. Fish. Aquat. Sci. 40(9): 1372-1387.

NORTHCOTE, T.G., C.J. WALTERS, and J.M.B. HUME 1977 Initial impacts of experimental fish introductions on the macrozooplankton of small oligotrophic lakes. Int. Ver. theor. angew. Limnol. Verh. 20(3): 2003-2012.

NUNOMURA, W., A. HARA, K. TAKANO, and H. HIRAI 1983 Immunohistochemical localization of vitellogenin in hepatic cells of some salmonid fishes. Bull. Fac. Fish. Hokkaido Univ. 34(2): 79-87. [In Japanese; English abstract]

NYMAN, L., J. HAMMAR, and R. GYDEMO 1981 The systematics and biology of landlocked populations of Arctic char from northern Europe. Inst. Freshw. Res. Drottningholm Rep. 59: 128-141.

ONOZATO, H., and E. YAMAHA 1983 Induction of gynogenesis with ultraviolet rays in four species of Salmoniformes. Bull. Jpn. Soc. Sci. Fish. 49(5): 693-699. [In Japanese; English abstract]

PAPST, M.H., and G.E. HOPKY 1983a Growth of Arctic charr (Salvelinus alpinus L.) in a pilot commercial rearing system. Can. Tech. Rep. Fish. Aquat. Sci. 1182: iv + 16 p.

PAPST, M.H., and G.E. HOPKY 1983b Development of an Arctic charr (Salvelinus alpinus) broodstock [Abstract]. In Salmonid reproduction: an international symposium, Bellevue, Washington, 31 Oct. - 2 Nov. 1983.

PAPST, M.H., and G.E. HOPKY 1984 Development of an Arctic charr (Salvelinus alpinus) L.) broodstock. Aquaculture 43: in press.

PECHNIKOV, A.S. 1980 Biologicheskoe obosnovanie i perspektivy ispol'zovaniya ozernoi formy gol'tsa Salvelinus alpinus (L.) species complex v ozernykh khozyaistvakh SSSR, [Biological basis and a view of the utilization of lake forms of the char, Salvelinus alpinus, species complex in the economy of the lakes of the USSR,] p.50-53. In Voprosy akklimatsii ryb i kormovykh bespozvonochnykh. [Problems on the acclimatization of fishes and their feeding on invertebrates.] Gos. Nauchno-Issled. Inst. Ozern. Rechn. Rybn. Khoz., Leningrad. (Rybokhozyaistvennoe Izuchenie Vnutrennykh Vod, Sbornik 25)

PEDROLI, J.C. 1983 Reintroduction de l'omble chevalier Salvelinus alpinus dans le lac de Neuchatel. [Reintroduction of Salvelinus alpinus in Lake Neuchatel (Switzerland).] Bull. Fr. Piscic. 290: 158-160.

PERCY, R. 1975 Fishes of the outer Mackenzie Delta. Beaufort Sea Proj. Tech. Rep. 8: 114 p.

PHILLIPS, R.B. 1983 Chromosomal location of nucleolar organizer regions in salmonids. Genetics 104(1 part 2): S56-S57.

PICHUGIN, M.Yu. 1983 Osteologicheskaya kharakteristika yuzhnogo gol'tsa roda Salvelinus (Salmonidae) iz populyatsii rek My i Bol'shaya Iska (Amurskii Leman). (Osteological description of southern char of the genus Salvelinus (Salmonidae) from the My and Bol'shaya River populations Amur Lagoon.) Vopr. Ikhtiol. 23(4): 557-568. (J. Ichthyol. 23(4): 27-38)

POHLHAUSEN, H. 1983 Freiwasseraufzucht von seesaiblingen mit Winterfuetterung. (Charr ranching and feeding during winter.) Fisch. Teichwirt. 34(4): 102-104.

RIGLER, F.H. 1978 Limnology in the high arctic: a case study of Char Lake. Int. Ver. theor. angew. Limnol. Verh. 20(1): 127-140.

ROGERS, A. 1980 Rescuing Dinorwic's fish. Water Power Dam Constr. 32(10): 24-30.

ROGERS, I.H., and H.W. MAHOOD 1982 Environmental monitoring of the Fraser River at Prince George. Chemical analysis of fish, sediment, municipal sewage and bleached kraft wastewater samples. Can. Tech. Rep. Fish. Aquat. Sci. 1135: iv + 15 p.

ROMBOUGH, P.J., S.E. BARBOUR, and J.J. KEREKES 1981 Freshwater fishes from northern Newfoundland. Can. Field-Nat. 95(3): 359-361.

RUHLE, C. 1980 Fischereiliche bewirtschaftung von Speicherseen im Gebirge, (Stock management in mountain reservoirs,) p. 23-42. In Fischereiliche Bewirtshaftung von Gewassern im Gebirge (Stock management in mountain waters.) Veroeff. Bundesamt. Umweltschutz Eidgenoess. Fischerei-Inspekt. 39.

RUKHLOV, F.N. 1980 O nerestuyushchei kundzhe sakhalina. [Spawning Salvelinus leucomaenis from Sakhalin.] Gidrobiol. Zh. 16(1): 89.

RUSSELL, L.R. 1975 An annotated bibliography on the ecology of aradromous cutthroat trout and Dolly Varden char. B.C. Minist. Environ. Fish. Tech. Circ. 17: 115 p.

SALONIUS, P.O. 1973 Barriers to range extension of Atlantic and Pacific salmon in Arctic North America. Arctic 26(2): 112-122.

SAVVAITOVA, K.A. 1983 Primenenie kontseptsii biologicheskogo vida k otsenke sistematicheskogo polozheniyakh gol'tsov roda Salvelinus (Salmonidae). (The application of the biological species concept to an evaluation of the systematic position of chars of the genus Salvelinus (Salmonidae).) Vopr. Ikhtiol. 23(6): 883-893. (J. Ichthyol. 23(6): 1-12)

SAVVAITOVA, K.A., and V.A. MAKSIMOV 1980 Formoobrazovanie u gol'tsov roda Salvelinus (Salmoniformes, Salmonidae) iz ozer del'ty leny. (Form origination in chars of the genus Salvelinus (Salmoniformes, Salmonidae) from the Lena Delta lakes.) Zool. Zh. 59(12): 1820-1830. [In Russian; English summary]

SAVVAITOVA, K.A., V.A. MAKSIMOV, and V.K. MEREZHIN 1980a Ecological forms in alpine char of the genus Salvelinus (Salmonidae, Salmoniformes) from mountain lakes of Transbaikalia Russian-Sfsr USSR. Biol. Nauki (Mosc.) 5: 20-32. [In Russian]

SAVVAITOVA, K.A., V.A. MAKSIMOV, and V.K. MEREZHIN 1981 Charrs, genus Salvelinus (Salmonidae, Salmoniformes) of Kuando Charsky mountain lakes from transbaikalian region USSR, p. 119-166. In L.I. Sokolov and A.I. Shatalkin (ed.) Ecological-faunistic research: biological resources of the territory in the zone of contruction of the Baikal-Amur railway. State University, Moscow. [In Russian]

SAVVAITOVA, K.A., V.A. MAKSIMOV, and V.D. NESTEROV 1980b K sistematike i ekologii gol'tsev roda Salvelinus (sem. Salmonidae) vodoemov poluostrova taimyr. (The systematics and ecology of chars of the genus Salvelinus (Salmonidae) of the Taimyr Peninsula.) Vopr. Ikhtiol. 20(2): 195-210. (J. Ichthyol. 20(2): 1-15)

SCRUTON, D.A. 1984 A survey of selected lakes in Labrador, with an assessment of lake status and sensitivity in relation to acid precipitation. Can. Tech. Rep. Fish. Aquat. Sci. 1296: v + 115 p.

SELSET, R. 1980 Chemical methods for fractionation of odorants produced by char smolts and tentative suggestions for pheromone origins. Acta Physiol. Scand. 108(1): 97-104.

SELSET, R., and K.B. DOVING 1980 Behavior of mature anadromous char, Salmo alpinus, toward odorants produced by smolts of their own population. Acta Physiol. Scand. 108(2): 113-122.

SHAPOVALOV, L., A.J. CORDONE, and W.A. DILL 1981 A list of the freshwater and anadromous fishes of California. Calif. Fish Game 67(1): 4-38. (p. 12, confluentus in McCloud River).

SKAFTASON, J.F., and T. JOHANNESSON 1982 Organochlorine compounds in Icelandic lake trout and salmon, Salmo salar, fry; local and global sources of contamination. Acta Pharmacol. Toxicol. 51(4): 397-400.

STABELL, O.B., and R. SELSET 1980 Comparison of mucus collecting methods in fish olfaction. Acta Physiol. Scand. 108: 91-96.

STEIN, H. 1981 Light and electron optical studies of the spermatozoa of various teleost fish. Z. angew. Zool. 68(2): 183-198. [In German]

STEINER, V. 1984 Die Kultivierung des Seesaiblings - Salvelinus alpinus L. - ein praxisnahes Forschungsprogramm am Institut fuer Fischforschung in Thaur/Tirol. (Culture of Arctic char - Salvelinus alpinus L. - a pilot programme at the Institute of Fish Investigation, Thaur/Tirol.) Oesterr. Fisch. 37(1): 15-23.

STERLING, G. 1980 Migratory behavior of the major salmonid fishes, rainbow trout, Dolly Varden char and mountain whitefish in the Tri-Creek Watershed, 1969 to 1978. Alberta Energy Nat. Resour. Fish Wildl. Div. Rep. 6: vi + 64 p.

SUNDNES, G., and O. SAND 1975 Studies of a physostome swimbladder by resonance frequency analyses. J. Cons. Cons. Int. Explor. Mer 36(2): 176-182.

TABACHEK, J.L. 1984 Evaluation of grower diets for intensive culture of two strains of Arctic charr (Salvelinus alpinus L.). Can. Tech. Rep. Fish. Aquat. Sci. 1281: iv + 21 p.

THOMAS, R.E., and S.D. RICE 1981 Excretion of aromatic hydrocarbons and their metabolites by freshwater and sea water Dolly Varden char Salvelinus malma, p. 425-448. In F.J. Vernberg, A. Calabrese, F.P. Thurberg and W.B. Vernberg (ed.) Biological monitoring of marine pollutants. Academic Press, New York, NY.

THOMMESEN, G. 1982 Specificity and distribution of receptor cells in the olfactory mucosa of char, Salmo alpinus. Acta Physiol. Scand. 115(1): 47-56.

THOMMESEN, G. 1983 Morphology, distribution and specificity of olfactory receptor cells in salmonid fishes. Acta Physiol. Scand. 117(2): 241-250.

VASILENKO, N.A., Yu.V. MOVCHAN and A.A. PETRUSENKO 1983 Study of the trophic links of malma, Salvelinus malma, of the Kuril Islands. Vestn. Zool. 4: 39-43. [In Russian]

VASIL'EVA, E.D. 1981a Ozernyi golets Salvelinus alpinus L. iz bassejna reki Zarubikha (k voprosu o gol'tsakh i paliyakh Kol'skogo poluostrova. (The lake char, Salvelinus alpinus, L. from the Zarubikha River basin (a contribution to the systematics of chars from the Kola Peninsula).) Vopr. Ikhtiol. 21(2): 232-247. (J. Ichthyol. 21: 26-42)

VASIL'EVA, E.D. 1981b Morfologiya cherepa prokhodnogo gol'tsa Salvelinus (Salmoniformes, Salmonidae) cheshskoj guby Barentseva Morya. (Skull morphology of anadromous char of the genus Salvelinus (Salmoniformes: Salmonidae) in Cheshskaya Bay Barents Sea.) Vestn. Mosk. Univ. Ser. 16 Biol. 4: 15-19. (Mosc. Univ. Biol. Sci. Bull. (Engl. Transl. Vestn. Mosk. Univ. Biol.) 36(4): 15-18.)

VOLOBUYEV, V.V., E.D. VASIL'EVA, and K.A. SAVVAITOVA 1979 O sistematicheskom statuse chukotskikh prokhodnykh gol'tsov roda Salvelinus. (The systematic status of the diadromous "Chukchi char" of the genus Salvelinus.) Vopr. Ikhtiol. 19(3): 408-418. (J. Ichthyol. 19(3): 21-30)

WALLACE, J.C., and D. AASJORD 1984a The initial feeding of Arctic charr (Salvelinus alpinus) alevins at different temperatures and under different feeding regimes. Aquaculture 38(1): 19-33.

WALLACE, J.C., and D. AASJORD 1984b An investigation of the consequences of egg size for the culture of Arctic charr, Salvelinus alpinus (L.). J. Fish Biol. 24(4): 427-435.

WANDSVIK, A., and M. JOBLING 1982a Observations on growth rates of Arctic charr, Salvelinus alpinus (L.), reared at low temperature. J. Fish Biol. 20(6): 689-699.

WANDSVIK, A., and M. JOBLING 1982b Overwintering mortality of migratory Arctic charr, Salvelinus alpinus (L.), reared in salt water. J. Fish. Biol. 20(6): 701-706.

WATANABE, T., M. SANO, Y. ISHIDA, Y. MIZUSAWA, and M. MICHIKAWA 1980 Establishment and properties of the continuous cell line derived from the embryonated egg of chum salmon, Oncorhynchus keta. Bull. Jpn. Soc. Sci. Fish. 46(10): 1203-1209.

WENT, A.E.J. 1974 Where to try for an Irish char. Trout and Salmon 19(223): 37-38.

WOLD, J.K., and R. SELSET 1977 Glycoproteins in the skin mucus of the char (Salmo alpinus L.). Comp. Biochem. Physiol. B. Comp. Biochem. 56(3): 215-218.

WOLD, J.K., and R. SELSET 1978 Glycoproteins in the skin mucus of the char (Salmo alpinus L.)-II. Production of mucus after death of fish. Comp. Biochem. Physiol. B. Comp. Biochem. 61(2): 271-273.

WOLF, E.G., B. MORSON, and K.W. FUCIK 1983 Preliminary studies of food habits of juvenile fish, China Poot Marsh and Potter Marsh, Alaska, 1978. Estuaries 6(2): 102-114.

YU, P.A. 1982 Biochemical population genetics and speciation. Evolution 36(6): 1168-1181.

ZALENSKII, A.O., P. BUKHKHOL'TS, and R.Kh. IBRAGIMOV 1980 Comparative study of protamines of the Salmonidae (Pisces). Tsitologiya 22(6): 727-729. [In Russian]

ZALENSKII, A.O., L.V. BRYKOVA, F.A. GOREL, V.A. BERDNIKOV, and I.A. ZALENSKAYA 1981 Comparison of the histones of various species of salmon and intraspecies variability of histone H-1 of Oncorhynchus nerka. Biochemistry (Engl. Transl. Biokhimiya) 46(3 part 2): 397-401.

ZELINSKII, Yu.P., A.V. POLINA, and I.M. MEDVEDEVA 1983 The karyotype and formation of adaptations in a freshwater lake char of the genus Salvelinus (Salmoniformes, Salmonidae in Lake Ladoga, USSR. Zool. Zh. 62(5): 732-736.

TAXONOMIC INDEX

ALBUS

Butorina, T.E. 1983
Butorina, T.E. et al. 1980
Glubokovskii, M.K. 1980

ALPINUS

Andersen, R. 1982
Andersson, L. et al. 1983
Bakke, T.A. 1982
Barber, F.G. 1978
Batterman, A.R., and P.M. Cook 1981
Belghaug, R., and K.B. Doving 1977
Black, G.A. 1982, 1983
Black, G.A., and M.W. Lankester 1981
Brannon, E.L. et al. 1984
Butsuk, S.V., and B.I. Bessonov 1981
Canada Department of Fisheries and Oceans 1984a, 1984b, 1984c
Carder, G.W. 1981, 1983
Carder, G.W., and R.F. Peet 1983
Castonguay, M., and G.J. Fitzgerald 1982
Chereshnev, I.A. 1982
Conneely, J.J., and T.K. McCarthy 1984
Corkum, L.D., and P.J. McCart 1981
Cowx, I.G. 1982
Craig, J.F., and J.M. Fletcher 1982
Craig, P.C. 1984
Craig, P.C., and L. Haldorson 1981
Dannevig, B.H. and T. Berg 1978a, 1978b
Dannevig, B.H. and K.R. Norum 1979, 1982, 1983
Dannevig, B.H. et al. 1981
Dempson, J.B., and R.K. Misra 1984
Dick, T.A., and M. Belosevic 1981
Doving, K.B., and R. Belghaug 1977
Doving, K.B., and R. Selset 1976
Doving, K.B. et al. 1973a, 1973b, 1974, 1980

Dumont, P. 1982
Dunbar, M.J. 1970
Dutil, J.D. 1983
Ferguson, A. 1981
Filipsson, O. 1983
Fryer, G. 1981
Gillman, D.V., and A.H. Kristofferson 1984
Glova, G.J., and P.J. McCart 1978
Glubokovskii, M.K. 1980
Glubokovskii, M.K., and I.A. Chereshnev 1981
Gnaiger, E. et al. 1981
Gruber, K., and W. Wieser 1983
Gustafson, K.J. et al. 1981
Halvorsen, O. 1970
Halvorsen, O., and K. Andersen 1984
Hammar, J. 1983
Hammar, J. et al. 1983
Heggberget, T.G., and B.O. Johnsen 1982
Hindar, K., and B. Jonsson 1982
Honsing-Erlenburg, W. 1982
Hunter, J.G. 1968
Hunter, J.G. et al. 1984
Jagoe, C.H., and T.A. Haines 1982, 1983
Jagoe, C.H. et al. 1984
Jensen, J.W. 1981, 1982
Jobling, M. 1983a, 1983b
Jobling, M., and A. Wandsvik 1983a, 1983b, 1983c
Johnson, L. 1983
Jonasson, P.M. et al. 1977
Jones, K.A., and T.J. Hara 1982
Jonsson, B., and K. Hindar 1982
Jungwirth, M., and H. Winkler 1983
Kaukoranta, M. et al. 1982
Khorevin, L.D. et al. 1981
Kipling, C. 1984
Kipling, C., and E.D. Le Cren 1984
Kornfield, I. et al. 1981
Kothbauer, H., and H. Schenkel-Brunner 1981
Kristjansson, J. 1978
Kristofferson, A.H., and G.W. Carder 1980
Kristofferson, A.H., and D.K. McGowan 1981
Kristofferson, A.H., and R.D. Sopuck 1983
Kristofferson, A.H. et al. 1982
Langeland, A. 1978, 1981
Laurent, P.J. 1982
Ledrew, L.J., and J.B. Dempson 1982
Legendre, V. 1980
Loenning, S. 1981
McAllister, D.E., and D. St-Onge 1981
Malmberg, G. 1973
Marshall, K.E. 1981
Mednikov, B.M. et al. 1980
Moles, A. 1982
Monod, G. 1983
Monod, G., and G. Keck 1982
Morton, W.M. 1982
Moshenko, R.W. 1981
Nesterov, V.D., and K.A. Savvaitova 1981
Nordeng, H. 1983
Nyman, L. et al. 1981
Papst, M.H., and G.E. Hopky 1983a, 1983b, 1984
Pechnikov, A.S. 1980
Pedroli, J.C. 1983
Percy, R. 1975
Phillips, R.B. 1983
Pichugin, M.Yu. 1983
Pohlhausen, H. 1983
Rigler, F.H. 1978
Rogers, A. 1980
Rombough, P.J. et al. 1981
Ruhle, C. 1980
Salonius, P.O. 1973
Savvaitova, K.A., and V.A. Maksimov 1980
Savvaitova, K.A. et al. 1980
Scruton, D.A. 1984
Selset, R. 1980
Selset, R., and K.B. Doving 1980
Skaftason, J.F., and T. Johannesson 1982
Stabell, O.B., and R. Selset 1980
Stein, H. 1981
Steiner, V. 1984
Sundnes, G., and O. Sand 1975
Tabachek, J.L. 1984
Thommesen, G. 1982, 1983
Vasil'eva, E.D. 1981a
Volobuyev, V.V. et al. 1979
Wallace, J.C., and D. Aasjord 1984a, 1984b
Wandsvik, A., and M. Jobling 1982a, 1982b
Went, A.E.J. 1974
Wold, J.K., and R. Selset 1977, 1978
Zelinskii, Yu.P. et al. 1983

BOGANIDAE

Kaukoranta, M. et al. 1982
Mednikov, B.M. et al. 1980

CONFLUENTUS

Leary, R.F. et al. 1983
Leathe, S.A., and P.J. Graham 1981
Shapovalov, L. et al. 1981

DRJAGINI

Kaukoranta, M. et al. 1982
Mednikov, B.M. et al. 1980

LEPECHINI

Zelinskii, Yu.P. et al. 1983

LEUCOMAENIS

Altukhov, Yu.P. 1982
Butorina, T.E. et al. 1980
Furukawa, T. 1981
Ivankov, V.N., and T.V. Shkafina 1981
Kagawa, H. et al. 1981
Kaukoranta, M. et al. 1982
Khorevin, L.D. et al. 1981
Marshall, K.E. 1981
Maruyama, T. 1981
Matsuno, T. et al. 1980
Mednikov, B.M. et al. 1980
Miyauchi, M., and M. Takagi 1981
Moravec, F. et al. 1981
Nagahama, Y. et al. 1982
Nagasawa, K., and S. Egusa 1981
Nakamura, M. 1982
Nomura, S., and H. Saito 1982
Nunomura, W. et al. 1983
Onozato, H., and E. Yamaha 1983
Rukhlov, F.N. 1980
Watanabe, T. et al. 1980

MALMA

Balon, E.K. 1982
Butorina, T.E. 1983

Butorina, T.E. et al. 1980
Chereshnev, I.A. 1982
Elliott, C.L., and S. Peck 1980
Ellis V., and B. Bowler 1981
Everest, F.H., and W.R. Meehan 1981
Fraley, J. et al. 1981
Glubokovskii, M.K. 1980
Glubokovskii, M.K., and I.A. Chereshnev 1981
Hanzel, D.A. 1980
Henderson, M.A. 1983
Jonsson, B. et al. 1984
Kartavtsev, Yu.F. et al. 1983
Kaukoranta, M. et al. 1982
Komiyama, E. et al. 1982
Kosyuk, G.N., and S.N. Borkhsenius 1981
Maekawa, K. 1978, 1983
Maksimovich, A.A. 1981
Margolis, L. et al. 1981
Marshall, K.E. 1981
Matsuno, T. et al. 1980
Mednikov, B.M. et al. 1980
Moles, A. 1982
Morton, W.M. 1982
Northcote, T.G. et al. 1977
Rogers, I.H., and H.W. Mahood 1982
Russell, L.R. 1975
Salonius, P.O. 1973
Shapovalov, L. et al. 1981
Sterling, G. 1980
Thomas, R.E., and S.D. Rice 1981
Vasilenko, N.A. et al. 1983
Wolf, E.G. et al. 1983
Zalenskii, A.O. et al. 1980, 1981

MIYABEI

Maekawa, K. 1978, 1983

NEIVA

Butorina, T.E. et al. 1980
Kaukoranta, M. et al. 1982

OQUASSA

Jagoe, C.H., and T.A. Haines 1982, 1983

PLUVIUS

Kiot, K., and M. Oguri 1984

SALVELINUS

Amann, E. 1980
Marrer, H. 1980
Nyman, L. et al. 1981

STAGNALIS

Nyman, L. et al. 1981

TARANETZI

Chereshnev, I.A. 1982
Glubokovskii, M.K., and I.A. Chereshnev 1981
Kartavtsev, Yu.F. et al. 1983

GEOGRAPHIC INDEX

AUSTRIA

Amann, E. 1980
Steiner, V. 1984

CANADA

Dunbar, M.J. 1970
Hunter, J.G. et al. 1984

Alberta
Sterling, G. 1980

British Columbia
Jonsson, B. et al. 1984
Northcote, T.G. et al. 1977
Rogers, I.H., and H.W. Mahood 1982

Great Bear Lake
Black, G.A. 1983

Great Lakes
Black, G.A. 1983

Hudson Bay
Barber, F.G. 1978
Hunter, J.G. 1968

Labrador
Canada Department of Fisheries and Oceans 1984c
Dempson, J.B., and R.K. Misra 1984
Glova, G.J., and P.J. McCart 1978
Ledrew, L.J., and J.B. Dempson 1982
Scruton, D.A. 1984

Newfoundland
Rombough, P.J. et al. 1981

Northwest Territories
Carder, G.W. 1981, 1983
Carder, G.W., and R.F. Peet 1983
Corkum, L.D., and P.J. McCart 1981
Dutil, J.D. 1983
Gillman, D.V., and A.H. Kristofferson 1984
Johnson, L. 1983
Kristofferson, A.H., and G.W. Carder 1980
Kristofferson, A.H., and D.K. McGowan 1981
Kristofferson, A.H., and R.D. Sopuck 1983
Kristofferson, A.H. et al. 1982
McAllister, D.E., and D. St-Onge 1981
Moshenko, R.W. 1981
Percy, R. 1975
Rigler, F.H. 1978

Quebec
Dumont, P. 1982
Legendre, V. 1980

DENMARK

Malmberg, G. 1973

ENGLAND

Craig, J.F., and J.M. Fletcher 1982
Fryer, G. 1981
Kipling, C. 1984
Kipling, C., and E.D. LeCren 1984

FRANCE (Some papers on Lake Geneva also under Switzerland)

Monod, G. 1983

ICELAND

Jonasson, P.M. et al. 1977
Kristjansson, J. 1978
Nyman, L. et al. 1981
Skaftason, J.F., and T. Johannesson 1982

IRELAND

Conneely, J.J., and T.K. McCarthy 1984
Went, A.E.J. 1974

JAPAN

Furukawa, T. 1981
Komiyama, E. et al. 1982
Maruyama, T. 1981
Moravec, F. et al. 1981
Nagasawa, W., and S. Egusa 1981

NORWAY

Andersen, R. 1982
Halvorsen, O. 1970
Halvorsen, O., and K. Anderson 1984
Heggberget, T.G., and B.O. Johnsen 1982
Hindar, K., and B. Jonsson 1982
Jensen, J.W. 1981, 1982
Jonsson, B., and K. Hindar 1982
Langeland, A. 1978, 1981
Nordeng, H. 1983
Nyman, L. et al. 1981

SWEDEN

Filipsson, O. 1983
Gustafson, K.J. et al. 1981
Hammar, J. 1983
Malmberg, G. 1973
Nyman, L. et al. 1981

SWITZERLAND

Laurent, P.J. 1982
Marrer, H. 1980
Monod, G., and G. Keck 1982
Pedroli, J.C. 1983
Ruhle, C. 1980

UNITED STATES OF AMERICA

Elliott, C.L., and S. Peck 1980

Alaska
Craig, P.C. 1984
Craig, P.C., and L. Haldorson 1981
Morton, W.M. 1982
Wolf, E.G. et al. 1983

Idaho
Ellis, V., and B. Bowler 1981

Montana
Fraley, J. et al. 1981
Hanzel, D.A. 1980
Leary, R.F. et al. 1983
Leathe, S.A., and P.J. Graham 1981

USSR

Ivankov, V.N., and N.I. Sergienko 1984
Pechnikov, A.S. 1980

Azabache, Lake
Bagiryan, S.Sh. 1981
Butorina, T.E. 1983

Chukotski Peninsula
Borisovets, E.F. 1982
Chereshnev, I.A. 1982
Kartavtsev, Yu.F. et al. 1983
Volobuyev, V.V. et al. 1979

Kamchatka
Bagiryan, S.Sh. 1981
Butorina, T.E. 1980, 1983

Kola Peninsula
Vasil'eva, E.D. 1981a

Kuril Islands
Vasilenko, N.A. et al. 1983

Sakhalin Island
Ivankov, V.N., and T.V. Shkafina 1981
Khorevin, L.D. et al. 1981
Rukhlov, F.N. 1980

Siberia
Glubokovskii, M.K. 1980
Glubokovskii, M.K., and I.A. Chereshnev 1981
Nesterov, V.D. and K.A. Savvaitova 1981
Pichugin, M.Yu. 1983
Savvaitova, K.A., and V.A. Maksimov 1980
Savvaitova, K.A. et al. 1980a, 1981
Vasil'eva, E.D. 1981b

Taimyr Peninsula
Savvaitova, K.A. et al. 1980b

WALES

Cowx, I.G. 1982
Rogers, A. 1980

SUBJECT INDEX

ANATOMY AND MORPHOLOGY

Chereshnev, I.A. 1982
Dempson, J.B., and R.K. Misra 1984
Glubokovskii, M.K., and I.A. Chereshnev 1981
Ivankov, V.N., and T.V. Shkafina 1981
Jagoe, C.H., and T.A. Haines 1982, 1983
Kiot, K., and M. Oguri 1984
Leary, R.F. et al. 1983
Loenning, S. 1981
Pichugin, M.Yu. 1983
Sundnes, G., and O. Sand 1975
Vasil'eva, E.D. 1981a, 1981b

AQUACULTURE

Jungwirth, M., and H. Winkler 1983
Onozato, H., and E. Yamaha 1983
Papst, M.H., and G.E. Hopky 1983a, 1983b, 1984
Pohlhausen, H. 1983
Steiner, V. 1984
Tabachek, J.L. 1984
Wallace, J.C., and D. Aasjord 1984a, 1984b
Wandsvik, A., and M. Jobling 1982a, 1982b

BEHAVIOR

Jones, K.A., and T.J. Hara 1982
Maekawa, K. 1983
Selset, R. and K. B. Doving 1980

BIBLIOGRAPHIES

Marshall, K.E. 1981
Russell, L.R. 1975

BLOOD

Dannevig, B.H., and K.R. Norum 1983
Kagawa, H. et al. 1981
Nomura, S., and H. Saito 1982

CYTOLOGICAL STUDIES

Ivankov, V.N., and T.V. Shkafina 1981

DEVELOPMENT

Gnaiger, E. et al. 1981
Gruber, K., and W. Wieser 1983
Jagoe, C.H. et al. 1984
Jungwirth, M., and H. Winkler 1983
Kothbauer, H., and H. Schenkel-Brunner 1981
Loenning, S. 1981
Maekawa, K. 1978

DISTRIBUTION

Butorina, T.E. et al. 1980
Craig, P.C. 1984
Dumont, P. 1982
Fryer, G. 1981
Ivankov, V.N., and T.V. Shkafina 1981
Jensen, J.W. 1981
Komiyama, E. et al. 1982
Laurent, P.J. 1982
Rombough, P.J. et al. 1981
Salonius, P.O. 1973
Shapovalov, L. et al. 1981
Went, A.E.J. 1974

ECOLOGY

Butorina, T.E. et al. 1980
Craig, P.C., and L. Haldorson 1981
Everest, F.H., and W.R. Meehan 1981
Gruber, K., and W. Wieser 1983
Hindar, K., and B. Jonsson 1982
Rigler, F.H. 1978
Savvaitova, K.A. et al. 1980b

FISHERIES

Canada Department of Fisheries and Oceans 1984c
Craig, J.F., and J.M. Fletcher 1982
Dunbar, M.J. 1970
Filipsson, O. 1983
Fraley, J. et al. 1981
Hanzel, D.A. 1980
Hunter, J.G. 1968
Johnson, L. 1983
Kristofferson, A.H. et al. 1982
Kristofferson, A.H., and D.K. McGowan 1981
Marrer, H. 1980
Moshenko, R.W. 1981

FISHERIES, COMMERCIAL

Carder, G.W. 1981, 1983
Carder, G.W., and R.F. Peet 1983
Gillman, D.V., and A.H. Kristofferson 1984
Kristofferson, A.H., and G.W. Carder 1980
Ledrew, L.J., and J.B. Dempson 1982

FISHERIES, SPORT

Ellis, V., and B. Bowler 1981
Kristofferson, A.H., and R.D. Sopuck 1983
Moshenko, R.W. 1981

FISHERY BIOLOGY

Amann, E. 1980

FOOD AND FEEDING HABITS

Balon, E.K. 1982
Dutil, J.D. 1983
Elliott, C.L., and S. Peck 1980
Furukawa, T. 1981
Hammar, J. 1983
Hammar, J. et al. 1983
Henderson, M.A. 1983
Hindar, K., and B. Jonsson 1982
Jensen, J.W. 1982
Jobling, M. 1983a
Jobling, M., and A. Wandsvik 1983b, 1983c
Khorevin, L.D. et al. 1981
Langeland, A. 1978, 1981
Leathe, S.A., and P.J. Graham 1981
Morton, W.M. 1982
Northcote, T.G. et al. 1977
Pechnikov, A.S. 1980
Ruhle, C. 1980
Steiner, V. 1984
Tabachek, J.L. 1984
Vasilenko, N.A. et al. 1983
Wallace, J.C., and D. Aasijord 1984a
Wolf, E.G. et al. 1983

GENERAL WORKS

Canada Department of Fisheries and Oceans 1984a, 1984b
Legendre, V. 1980

GENETICS

Altukhov, Yu.P. 1982
Andersson, L. et al. 1983

Ferguson, A. 1981
Kartavtsev, Yu.F. et al. 1983
Kaukoranta, M. et al. 1982
Kornfield, I. et al. 1981
Kosyuk, G.N., and S.N. Borkhsenius 1981
Mednikov, B.M. et al. 1980
Mitrofanov, Yu.A. 1983
Phillips, R.B. 1983
Yu, P.A. 1982
Zalenskii, A.O. et al. 1980, 1981
Zelinskii, Yu.P. et al. 1983

GROWTH

Gustafson, K.J. et al. 1981
Jobling, M. 1983a, 1983b
Jobling, M., and A. Wandsvik 1983a
Kipling, C. 1984
Kipling, C., and E.D. Le Cren 1984
Kristjansson, J. 1978
Leathe, S.A., and P.J. Graham 1981
Maekawa, K. 1978
Papst, M.H., and G.E. Hopky 1983a
Savvaitova, K.A., and V.A. Maksimov 1980
Wandsvik, A., and M. Jobling 1982a

HYBRIDS

Honsing-Erlenburg, W. 1982
Leary, R.F. et al. 1983

IMMUNOLOGICAL STUDIES

Kothbauer, H., and H. Schenkel-Brunner 1981
Nunomura, W. et al. 1983

INTRODUCTIONS, STOCKING AND TRANSPLANTATION

Gustafson, K.J. et al. 1981
Nordeng, H. 1983
Pedroli, J.C. 1983
Rogers, A. 1980

MIGRATIONS AND MOVEMENTS

Brannon, E.D. 1984
Butorina, T.E. 1983
Castonguay, M., and G.J. Fitzgerald 1982
Chereshnev, I.A. 1982
Dick, T.A., and M. Belosevic 1981
Hanzel, D.A. 1980
Jensen, J.W. 1981
Kipling, C., and E.D. Le Cren 1984
Leathe, S.A., and P.J. Graham 1981
Sterling, G. 1980

OLFACTION

Belghaug, R., and K.B. Doving 1977
Brannon, E.D. 1984
Doving, K.B., and R. Belghaug 1977
Doving, K.B., and R. Selset 1976
Doving, K.B. et al. 1973a, 1973b, 1974, 1980
Jones, K.A., and T.J. Hara 1982
Selset, R. 1980
Selset, R., and K.B. Doving 1980
Stabell, O.B., and R. Selset 1980
Thommesen, G. 1982, 1983

PARASITES AND DISEASES

Bakke, T.A. 1982
Black, G.A. 1982, 1983
Black, G.A., and M.W. Lankester 1981
Butorina, T.E. 1980
Butorina, T.E. et al. 1980
Conneely, J.J., and T.K. McCarthy 1984
Dick, T.A., and M. Belosevic 1981
Fryer, G. 1981
Halvorsen, O. 1970
Halvorsen, O., and K. Andersen 1984
Hammar, J. et al. 1983
Heggberget, T.G., and B.O. Johnsen 1982
Malmberg, G. 1973
Margolis, L. et al. 1981
Moles, A. 1982
Moravec, F. et al. 1981
Nagasawa, K., and S. Egusa 1981
Nordeng, H. 1983
Watanabe, T. et al. 1980

PHYSIOLOGY AND BIOCHEMISTRY

Butsuk, S.V. and B.I. Bessonov 1981
Dannevig, B.H., and T. Berg 1978a, 1978b
Dannevig, B.H., and K.R. Norum 1979, 1982, 1983
Dannevig, B.G. et al. 1981
Dutil, J.D. 1983
Gnaiger, E. et al. 1981
Gruber, K., and W. Wieser 1983
Honsing-Erlenburg, W. 1982
Ivankov, V.N., and T.V. Shkafina 1981
Jagoe, C.H., and T.A. Haines 1983
Jobling, M. 1983b
Jobling, M., and A. Wandsvik 1983a
Kagawa, H. et al. 1981
Maksimovich, A.A. 1981
Matsuno, T. et al. 1980
Miyauchi, M., and M. Takagi 1981
Nagahama, Y. et al. 1982
Numomura, W. et al. 1983
Tabachek, J.L. 1984
Wold, J.K., and R. Selset 1977, 1978

POLLUTION STUDIES

Batterman, A.R., and P.M. Cook 1981
Cowx, I.G. 1982
Jagoe, C.H. and T.A. Haines 1982, 1983
Jagoe, C.H. et al. 1984
Miyauchi, M., and M. Takagi 1981
Monod, G. 1983
Monod, G., and G. Keck 1982
Rogers, I.H., and H.W. Mahood 1982
Scruton, D.A. 1984
Skaftason, J.F., and T. Johannesson 1982
Thomas, R.E., and S.D. Rice 1981

POPULATION STUDIES

Borisovets, E.F. 1982
Dempson, J.B., and R.K. Misra 1984
Gillman, D.V., and A.H. Kristofferson 1984
Glova, G.J., and P.J. McCart 1978
Glubokovskii, M.K. 1980
Johnson, L. 1983
Kristofferson, A.H., and R.D. Sopuck 1983
Nordeng, H. 1983

REPRODUCTION

Andersen, R. 1982
Ivankov, V.N., and N.I. Sergienko 1984
Jonsson, B., and K. Hindar 1982
Jonsson, B. et al. 1984
Kipling, C. 1984
Maekawa, K. 1983
Maruyama, T. 1981
Monod, G. 1983
Nakamura, M. 1982
Onozato, H., and E. Yamaha 1983
Ruhle, C. 1980
Rukhlov, F.N. 1980
Stein, H. 1981
Wallace, J.C., and D. Aajord 1984b

REVIEWS

Corkum, L.D., and P.J. McCart 1981

TAXONOMY

Bagiryan, S.Sh. 1981
Chereshnev, I.A. 1982
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Honsing-Erlenburg, W. 1982
Kaukoranta, M. et al. 1982
Nesterov, V.D., and K.A. Savvaitova 1981
Nyman, L. et al. 1981
Pichugin, M.Yu. 1983
Savvaitova, K.A. 1983
Savvaitova, K.A., and V.A. Maksimov 1980
Savvaitova, K.A. et al. 1980a, 1980b, 1981
Vasil'eva, E.D. 1981a, 1981b
Volobuyev, V.V. et al. 1979
Yu, P.A. 1982